



U.S. Serial No. 09/301,906

Version of Claims Showing Changes Made, Pursuant to 37 C.F.R. § 1.101(c)(1)

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Cancel claims 12 and 19-31.

Amend claim 6.

6. (Twice Amended) An isolated grapevine leafroll virus RNA molecule encoding a protein or polypeptide comprising [a proteinase domain] the amino acid sequence of SEQ ID NO:5.

Add new claims 35-67.

--35. (New) An isolated DNA molecule that encodes a protein or polypeptide comprising the amino acid sequence of SEQ ID NO:5.

36. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions the sequence of SEQ ID NO:4 or its complement to RNA in a solution comprising 50% formamide, 5X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate, 50 mM Sodium Phosphate at pH 6.8, 0.1% Sodium Pyrophosphate, 5X Denhart's solution, 50 µg/ml sonicated salmon sperm DNA, 0.1% Sodium Dodecyl Sulfate, and 10% Dextran Sulfate at 42°C with washes at 42°C in 0.2X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate and 0.1% Sodium Dodecyl Sulfate, and (b) isolating the RNA detected with the sequence of SEQ ID NO:4 or its complement.

37. (New) The process of claim 36, wherein said RNA of step (a) is isolated from a plant infected with a grapevine leafroll virus.

38. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement to RNA in a solution comprising 50% formamide, 5X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate, 50 mM Sodium Phosphate at pH 6.8, 0.1% Sodium Pyrophosphate, 5X Denhart's solution, 50 µg/ml sonicated salmon sperm DNA, 0.1% Sodium Dodecyl Sulfate, and 10% Dextran Sulfate at 42°C with washes at 42°C in 0.2X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate and 0.1% Sodium Dodecyl Sulfate, and (b) isolating the RNA detected with at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement.

39. (New) The process of claim 38, wherein said RNA of step (a) is isolated from a plant infected with a grapevine leafroll virus.

40. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 100 contiguous nucleotides of SEQ ID NO:4 or

its complement to RNA in a solution comprising 50% formamide, 5X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate, 50 mM Sodium Phosphate at pH 6.8, 0.1% Sodium Pyrophosphate, 5X Denhart's solution, 50 µg/ml sonicated salmon sperm DNA, 0.1% Sodium Dodecyl Sulfate, and 10% Dextran Sulfate at 42°C with washes at 42°C in 0.2X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate and 0.1% Sodium Dodecyl Sulfate, and (b) isolating the RNA detected with at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement.

41. (New) The process of claim 40, wherein said RNA of step (a) is isolated from a plant infected with a grapevine leafroll virus.

42. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions the sequence of SEQ ID NO:4 or its complement to DNA in a solution comprising 50% formamide, 0.1% bovine serum albumin, 0.1% Ficoll, 0.1% polyvinylpyrrolidone, 50 mM phosphate buffer at pH 6.5, 750 mM NaCl, and 75 mM sodium citrate at 42°C, and (b) isolating the DNA detected with the sequence of SEQ ID NO:4 or its complement.

43. (New) The process of claim 42, wherein said DNA of step (a) is DNA complementary to a grapevine leafroll virus RNA molecule.

44. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement to DNA in a solution comprising 50% formamide, 0.1% bovine serum albumin, 0.1% Ficoll, 0.1% polyvinylpyrrolidone, 50 mM phosphate buffer at pH 6.5, 750 mM NaCl, and 75 mM sodium citrate at 42°C, and (b) isolating the DNA detected with at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement.

45. (New) The process of claim 44, wherein said DNA of step (a) is DNA complementary to a grapevine leafroll virus RNA molecule.

46. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement to DNA in a solution comprising 50% formamide, 0.1% bovine serum albumin, 0.1% Ficoll, 0.1% polyvinylpyrrolidone, 50 mM phosphate buffer at pH 6.5, 750 mM NaCl, and 75 mM sodium citrate at 42°C, and (b) isolating the DNA detected with at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement.

47. (New) The process of claim 46, wherein said DNA of step (a) is DNA complementary to a grapevine leafroll virus RNA molecule.

48. (New) An isolated RNA molecule produced according to the process of claim 36.

49. (New) An isolated RNA molecule produced according to the process of claim 38.

50. (New) An isolated RNA molecule produced according to the process of claim 40.

51. (New) The isolated RNA molecule of claim 48, 49, or 50, wherein said RNA molecule is an isolated genomic RNA molecule.

52. (New) An isolated DNA molecule produced according to the process of claim 42.

53. (New) An isolated DNA molecule produced according to the process of claim 44.

54. (New) An isolated DNA molecule produced according to the process of claim 46.

55. (New) An expression vector comprising the DNA molecule of claim 35, 52, 53, or 54.

56. (New) The expression vector of claim 55, wherein the DNA molecule is inserted in sense orientation.

57. (New) The expression vector of claim 55, wherein the DNA molecule is inserted in antisense orientation.

58. (New) A host cell transformed with the DNA molecule of claim 35, 52, 53, or 54.

59. (New) The host cell of claim 58, wherein the host cell is selected from the group consisting of *Agrobacterium vitis* and *Agrobacterium tumefaciens*.

60. (New) The host cell of claim 58, wherein the host cell is a grape cell or a citrus cell.

61. (New) A transgenic plant or transgenic plant component comprising the DNA molecule according to claim 35, 52, 53, or 54.

62. (New) The transgenic plant or transgenic plant component of claim 61, wherein said transgenic plant component is a scion.

63. (New) The transgenic plant or transgenic plant component of claim 61, wherein said transgenic plant component is a rootstock.

64. (New) The transgenic plant or transgenic plant component of claim 61, wherein said transgenic plant component is a somatic embryo.

65. (New) A method for conferring viral disease resistance to a plant or plant component thereof, said method comprising the steps of :

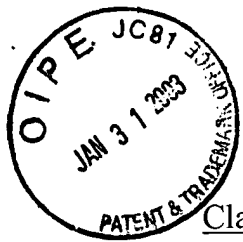
(a) transforming a plant cell with a DNA molecule of claim 35, 52, 53, or 54, or a fragment thereof, which is expressed in said plant cell; and

(b) regenerating a plant or plant component thereof from said plant cell, wherein expression of said DNA in said plant or plant component thereof confers viral resistance to said plant or said plant component.

66. (New) The method of claim 65, wherein said plant or plant component is resistant to a grapevine leafroll virus selected from the group of GLRaV-1, GLRaV-2, GLRaV-3, GLRaV-4, GLRaV-5, and GLRaV-6.

67. (New) The method of claim 65, wherein said plant or plant component is resistant to a beet yellows virus, lettuce infectious yellows virus, or citrus tristeza virus.--





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Claims Pending After Entry of Amendment, Pursuant to 37 C.F.R. § 1.121(c)

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6. (Twice Amended) An isolated grapevine leafroll virus RNA molecule encoding a protein or polypeptide comprising the amino acid sequence of SEQ ID NO:5.

35. (New) An isolated DNA molecule that encodes a protein or polypeptide comprising the amino acid sequence of SEQ ID NO:5.

36. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions the sequence of SEQ ID NO:4 or its complement to RNA in a solution comprising 50% formamide, 5X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate, 50 mM Sodium Phosphate at pH 6.8, 0.1% Sodium Pyrophosphate, 5X Denhart's solution, 50 µg/ml sonicated salmon sperm DNA, 0.1% Sodium Dodecyl Sulfate, and 10% Dextran Sulfate at 42°C with washes at 42°C in 0.2X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate and 0.1% Sodium Dodecyl Sulfate, and (b) isolating the RNA detected with the sequence of SEQ ID NO:4 or its complement.

37. (New) The process of claim 36, wherein said RNA of step (a) is isolated from a plant infected with a grapevine leafroll virus.

38. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement to RNA in a solution comprising 50% formamide, 5X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate, 50 mM Sodium Phosphate at pH 6.8, 0.1% Sodium Pyrophosphate, 5X Denhart's solution, 50 µg/ml sonicated salmon sperm DNA, 0.1% Sodium Dodecyl Sulfate, and 10% Dextran Sulfate at 42°C with washes at 42°C in 0.2X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate and 0.1% Sodium Dodecyl Sulfate, and (b) isolating the RNA detected with at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement.

39. (New) The process of claim 38, wherein said RNA of step (a) is isolated from a plant infected with a grapevine leafroll virus.

40. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement to RNA in a solution comprising 50% formamide, 5X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate, 50 mM Sodium Phosphate at pH 6.8, 0.1% Sodium Pyrophosphate, 5X Denhart's solution, 50

μg/ml sonicated salmon sperm DNA, 0.1% Sodium Dodecyl Sulfate, and 10% Dextran Sulfate at 42°C with washes at 42°C in 0.2X SSC containing 0.75 M NaCl and 0.075 M Sodium Phosphate and 0.1% Sodium Dodecyl Sulfate, and (b) isolating the RNA detected with at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement.

41. (New) The process of claim 40, wherein said RNA of step (a) is isolated from a plant infected with a grapevine leafroll virus.

42. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions the sequence of SEQ ID NO:4 or its complement to DNA in a solution comprising 50% formamide, 0.1% bovine serum albumin, 0.1% Ficoll, 0.1% polyvinylpyrrolidone, 50 mM phosphate buffer at pH 6.5, 750 mM NaCl, and 75 mM sodium citrate at 42°C, and (b) isolating the DNA detected with the sequence of SEQ ID NO:4 or its complement.

43. (New) The process of claim 42, wherein said DNA of step (a) is DNA complementary to a grapevine leafroll virus RNA molecule.

44. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under

highly stringent conditions at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement to DNA in a solution comprising 50% formamide, 0.1% bovine serum albumin, 0.1% Ficoll, 0.1% polyvinylpyrrolidone, 50 mM phosphate buffer at pH 6.5, 750 mM NaCl, and 75 mM sodium citrate at 42°C, and (b) isolating the DNA detected with at least 50 contiguous nucleotides of SEQ ID NO:4 or its complement.

45. (New) The process of claim 44, wherein said DNA of step (a) is DNA complementary to a grapevine leafroll virus RNA molecule.

46. (New) A process for producing an isolated grapevine leafroll virus nucleic acid sequence, said process comprising the steps of (a) hybridizing under highly stringent conditions at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement to DNA in a solution comprising 50% formamide, 0.1% bovine serum albumin, 0.1% Ficoll, 0.1% polyvinylpyrrolidone, 50 mM phosphate buffer at pH 6.5, 750 mM NaCl, and 75 mM sodium citrate at 42°C, and (b) isolating the DNA detected with at least 100 contiguous nucleotides of SEQ ID NO:4 or its complement.

47. (New) The process of claim 46, wherein said DNA of step (a) is DNA complementary to a grapevine leafroll virus RNA molecule.

48. (New) An isolated RNA molecule produced according to the process of claim 36.

49. (New) An isolated RNA molecule produced according to the process of claim 38.

50. (New) An isolated RNA molecule produced according to the process of claim 40.

51. (New) The isolated RNA molecule of claim 48, 49, or 50, wherein said RNA molecule is an isolated genomic RNA molecule.

52. (New) An isolated DNA molecule produced according to the process of claim 42.

53. (New) An isolated DNA molecule produced according to the process of claim 44.

54. (New) An isolated DNA molecule produced according to the process of claim 46.

55. (New) An expression vector comprising the DNA molecule of claim 35, 52, 53, or 54.

56. (New) The expression vector of claim 55, wherein the DNA molecule is inserted in sense orientation.

57. (New) The expression vector of claim 55, wherein the DNA molecule is inserted in antisense orientation.

58. (New) A host cell transformed with the DNA molecule of claim 35, 52, 53, or 54.

59. (New) The host cell of claim 58, wherein the host cell is selected from the group consisting of *Agrobacterium vitis* and *Agrobacterium tumefaciens*.

60. (New) The host cell of claim 58, wherein the host cell is a grape cell or a citrus cell.

61. (New) A transgenic plant or transgenic plant component comprising the DNA molecule according to claim 35, 52, 53, or 54.

62. (New) The transgenic plant or transgenic plant component of claim 61, wherein said transgenic plant component is a scion.

63. (New) The transgenic plant or transgenic plant component of claim 61, wherein said transgenic plant component is a rootstock.

64. (New) The transgenic plant or transgenic plant component of claim 61, wherein said transgenic plant component is a somatic embryo.

65. (New) A method for conferring viral disease resistance to a plant or plant component thereof, said method comprising the steps of :

(a) transforming a plant cell with a DNA molecule of claim 35, 52, 53, or 54, or a fragment thereof, which is expressed in said plant cell; and

(b) regenerating a plant or plant component thereof from said plant cell, wherein expression of said DNA in said plant or plant component thereof confers viral resistance to said plant or said plant component.

66. (New) The method of claim 65, wherein said plant or plant component is resistant to a grapevine leafroll virus selected from the group of GLRaV-1, GLRaV-2, GLRaV-3, GLRaV-4, GLRaV-5, and GLRaV-6.

67. (New) The method of claim 65, wherein said plant or plant component is resistant to a beet yellows virus, lettuce infectious yellows virus, or citrus tristeza virus.